PRESS BULLETIN 498 *October, 1936*

UNIVERSITY OF FLORIDA
AGRICULTURAL EXPERIMENT STATION
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GAINESVILLE

IMPERIAL MYCOLOGICAL INSTITUTE
18 MAR. 1937

CONTROL OF DOWNY MILDEW (BLUE MOLD) OF TOBACCO IN FLORIDA

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Downy mildew (blue mold) of tobacco is caused by a parasitic fungus*. The thread-like structures which make up this microscopic plant grow for some time within the tissues of the leaf, producing yellowish or pale, transparent areas on the leaf, and sometimes a downward curling of the leaf margins. These first symptoms are often so inconspicuous as to remain unnoticed, or they may be confused with the similar symptoms of cold weather or wind injury.

When suitable weather conditions prevail, the fungus grows out on the surface of the leaf, and forms a downy coating, which is the familiar "blue mold". This is usually formed first on the under surface of the lower leaves, but within a few days it appears on the upper leaves, where it is easily detected. This whitish or bluish coating is most conspicuous early in the morning when dew is on the plants. Later in the day the blue color usually disappears, and the affected spots die and dry out, giving the plants a scalded appearance.

Spores, which serve as the "seeds" of the fungus, are produced by the thousands in this downy coating, from which they are carried by wind, man and other agencies to infect other plants in the same bed or in neighboring beds. The fungus may continue to grow on any living tobacco plants through the summer, fall and winter, and therefore volunteer plants are a menace to the next year's crop. The fungus may also over-winter in the soil of old plant beds.

The development of the disease is favored by cool, damp weather, and hindered by warm weather and sunshine. Windy weather is favorable to the spread of the disease.

The following recommendations for the control of downy mildew are based on what is known regarding the nature and development of the disease, as briefly outlined above.

**Peronospora tabacina* Adam.

1. Destroy all tobacco plants remaining in the seedbeds after transplanting, and in the fields immediately after harvest.

2. Two or three seedbeds, as far apart as possible, if they are well cared for, are better than one large bed.

3. Sterilize the soil of the bed thoroughly. If an unsterilized bed must be used, select a location as far as possible from last year's bed.

4. Cut down all trees which shade the bed.

5. Provide good drainage for the soil. Beds 3 or 4 feet wide, elevated a few inches above the walks, are preferable to one continuous flat bed.

6. Sow the bed in such way as to obtain a rather thin stand of plants.

7. Remove the cloth from the beds early in the mornings to allow the sunshine and wind to dry the dew from the plants as quickly as possible. The cloth may be replaced after the plants are dry. This precaution is especially important if downy mildew has already appeared in other beds in the vicinity. Two or three weeks before the plants are ready to set, the cloth should be left off, replacing it only if frost threatens.

8. If the disease is discovered in the bed, an application of nitrate of soda may assist in hastening the recovery of the plants. Dissolve from 3 to 5 pounds of nitrate of soda in 50 gallons of water, and apply with a sprinkling can to about 100 square yards of bed. Sprinkle the plants again immediately with water to avoid burning the leaves. This treatment will not be necessary if there is already plenty of nitrogenous fertilizer in the soil for a vigorous growth of the plants. Excessive applications of nitrogen will make the plants too tender.

9. Avoid going directly from a diseased bed or portion of a bed to a healthy one. The shoes and outer clothing should be changed and the hands washed with soap and water before visiting a healthy bed. The clothing should be washed or thoroughly sunned before it is worn again in the plant bed.

10. Plants should never be pulled and set while the disease is active on them. They may be used after they have completely recovered.

11. No sprays or dusts can be recommended at this time for the control of downy mildew.

Control measures such as those recommended above will not altogether prevent the occurrence of downy mildew. However, it is believed that if these measures are carefully observed by all growers, the loss occasioned by the disease will be considerably reduced.